



**United States
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Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Division**

**Fresh
Products
Branch**

United States Standards for Grades of Pistachio Nuts in the Shell

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General

§51.2540 General.

(a) Compliance with the provisions of these standards shall not excuse failure to comply with provisions of applicable Federal or State laws.

(b) These standards are applicable to pistachio nuts in the shell which may be in a natural, dyed, raw, roasted, or salted state; or in any combination thereof. However, nuts of obviously dissimilar forms shall not be commingled.

Grades

§51.2541 Grades.

"U.S. Fancy," "U.S. No. 1," "U.S. No. 2," and "U.S. No. 3" consist of pistachio nuts in the shell which meet the following requirements:

(a) Basic requirements:

(1) Free from:

(i) Foreign material;

(ii) Loose kernels;

(iii) Shell pieces;

(iv) Particles and dust; and,

(v) Blanks.

(b) Shells:

(1) Free from:

(i) Non-split shells; and,

(ii) Shells not split on suture.

- (2) Free from damage by:
 - (i) Adhering hull material;
 - (ii) Light stained;
 - (iii) Dark stained; and,
 - (iv) Other External (shell) defects.
- (c) Kernels:
 - (1) Well dried, or, very well dried when specified in connection with the grade.
 - (2) Free from damage by:
 - (i) Minor mold;
 - (ii) Immature kernels;
 - (iii) Kernel spots; and,
 - (iv) Other Internal (kernel) defects.
 - (3) Free from serious damage by:
 - (i) Minor insect or vertebrate injury;
 - (ii) Insect damage;
 - (iii) Mold;
 - (iv) Rancidity;
 - (v) Decay; and,
 - (vi) Other Internal (kernel) defects.
- (d) The nuts are of a size not less than 26/64 inch in diameter as measured by a round hole screen.
- (e) For tolerances see section 51.2542.

Tolerances

§51.2542 Tolerances.

(a) In order to allow for variations incident to proper grading and handling, the tolerances in Tables I, II, III and paragraph (b) of this section are provided.

Table I

Factor	U.S. Fancy	U.S. No. 1	U.S. No. 2	U.S. No. 3
External (shell) defects (tolerances by weight)	Percent	Percent	Percent	Percent
(a) Non-split and not split on suture	2	3	6	10
(1) Non-split included in (a)	1	2	4	4
(b) Adhering hull material	1	1	2	2
(c) Light stained	7	12	20	35
(1) Dark stained, included in (c)	2	3	4	6
(d) Damage by other means	1	1	1	2
(e) Less than 26/64 inch in diameter:	5	5	5	5
(1) Small size				
(2) Medium, Large, Extra Large sizes	1	1	1	1

Table II

Factor	U.S. Fancy	U.S. No. 1	U.S. No. 2	U.S. No. 3
Internal (kernel) defects (tolerances by weight)	Percent	Percent	Percent	Percent
(a) Damage	3	6	8	8
(b) Serious Damage	3	4	5	5
(1) Insect damage, included in (b)	1	2	3	3
Total internal defects shall not exceed	5	9	10	10

Table III

Factor	U.S. Fancy	U.S. No. 1	U.S. No. 2	U.S. No. 3
Other defects (tolerances by weight)	Percent	Percent	Percent	Percent
(a) Shell pieces and blanks	1	1	2	2
(b) Foreign material (No glass, metal, or live insects shall be permitted)	.25	.25	.50	.50
(c) Particles and dust	.25	.25	.25	.25

(b) No lot shall contain more than 4 percent loose kernels, by weight.

Application of Tolerances

§51.2543 Application of Tolerances.

The tolerances for the grades apply to the entire lot and shall be based on a composite sample drawn from containers throughout the lot. Any container or group of containers which have nuts obviously different in quality or size from those in the majority of the containers shall be considered a separate lot and shall be sampled separately.

Size

§51.2544 Size.

Nuts may be considered as meeting a size designation specified in Table IV or a range in number of nuts per ounce, provided, the weight of 10 percent, by count, of the largest nuts in a sample does not exceed 1.70 times the weight of 10 percent, by count, of the smallest and the average number of nuts per ounce is not more than one-half nut above or below the extremes of the range specified.

Table IV

Size Designations	Average number of nuts per ounce ¹
Extra Large	20 or less.
Large	21 to 25.
Medium	26 to 30.
Small	31 or more.

¹Before roasting.

Definitions

§51.2545 Definitions.

(a) "Well dried" means the kernel is firm and crisp.

(b) "Very well dried" means the kernel is firm and crisp and the average moisture content of the

lot does not exceed 7.00 percent or is specified. (See §51.2546).

(c) "Loose kernels" means edible kernels or kernel portions which are out of the shell and which cannot be considered particles and dust.

(d) "External (shell) defects" means any blemish affecting the hard covering around the kernel. Such defects include, but are not limited to, non-split shells, shells not split on suture, adhering hull material, light stained, or dark stained.

(1) "Damage" by external (shell) defects means any specific defect described in paragraph (d)(1)

(i) through (v) of this section, or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which materially detracts from the appearance or the edible or marketing quality of the individual shell or of the lot. (For tolerances see §51.2542, Table I).

(i) "Non-split shells" when shells are not opened or are partially opened and will not allow an 18/1000 (.018) inch thick by 1/4 (.25) inch wide gauge to slip into the opening.

(ii) "Not split on suture" when shells are split other than on the suture and will allow an 18/1000 (.018) inch thick by 1/4 (.25) inch wide gauge to slip into the opening.

(iii) "Adhering hull material" when an aggregate amount covers more than one-sixteenth of the total shell surface, or when readily noticeable on dyed shells.

(iv) "Light stained" on raw or roasted nuts, when an aggregate amount of yellow to light brown or light gray discoloration is noticeably contrasting with the predominate color of the shell and affects more than one-fourth of the total shell surface or, on dyed nuts, when readily noticeable.

(v) "Dark stained" on raw or roasted nuts, when an aggregate amount of dark brown, dark gray or black discoloration affects more than one-eighth of the total shell surface, or, on dyed nuts, when readily noticeable.

(e) "Internal (kernel) defects" means any blemish affecting the kernel. Such defects include, but are not limited to evidence of insects, immature kernels, rancid kernels, mold, or decay.

(1) "Damage" by internal (kernel) defects means any specific defect described in paragraphs (e)(1)

(i) through (iii) of this section; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which materially detracts from the appearance or the edible or marketing quality of the individual kernel or of the lot. (For tolerances see §51.2542, Table II).

(i) "Minor white or gray mold" when not readily noticeable on the kernel and which can be easily rubbed off with the fingers.

(ii) "Immature kernels" when they are excessively thin or when a kernel fills less than three-fourths, but not less than one-half the shell cavity.

(iii) "Kernel spots" when dark brown or dark gray and aggregating more than one-eighth of the surface of the kernel.

(2) "Serious damage" by internal (kernel) defects means any specific defect described in paragraphs (e)(2) (i) through (v) of this section; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which seriously detracts from the appearance or the edible or the marketing quality of the individual kernel or of the lot. (For tolerances see §51.2542, Table II).

(i) "Minor insect or vertebrate injury" when the kernel shows conspicuous evidence of feeding.

(ii) "Insect damage" when an insect, insect fragment, web or frass is attached to the kernel. No

live insects shall be permitted.

(iii) "Mold" when any type is readily visible on the shell or kernel.

(iv) "Rancidity" means the kernel is distinctly rancid to taste. Staleness of flavor shall not be classed as rancidity.

(v) "Decay" when any portion of the kernel is decomposed.

(f) "Other defects" means defects which cannot be considered internal defects or external defects. Such defects include, but are not limited to shell pieces, blanks, foreign material or particles and dust. The following shall be considered other defects. (For tolerances see §51.2542, Table III).

(1) "Shell pieces" means half shells or pieces of shell which are loose in the sample.

(2) "Blank" means a split or a non-split shell not containing a kernel or containing a kernel that fills less than one-half the shell cavity.

(3) "Foreign material" means leaves, sticks, loose hulls or hull pieces, dirt, rocks, insects or insect fragments not attached to nuts, or any substance other than pistachio shells or kernels. Glass, metal or live insects shall not be permitted.

(4) "Particles and dust" means pieces of nut kernels which will pass through a 5/64 inch round opening.

§51.2546 Average moisture content determination.

(a) Determining average moisture content of the lot is not a requirement of the grades, except when nuts are specified as "very well dried." It may be carried out upon request in connection with grade analysis or as a separate determination.

(b) Nuts shall be obtained from a randomly drawn composite sample and only kernels shall be used for analysis. Shells and all non-kernel material shall be removed immediately before analysis. Official certification shall be based on the air-oven method or other officially approved methods or devices. Results obtained by methods or devices not officially approved may be reported and shall include a description of the method or device and the owner of any equipment used.

Metric Conversion Table

§51.2547 Metric conversion table.

Inches	Millimeters
5/64	1.98
18/1000	0.46
1/4	6.35
26/64	10.32

Ounces	Grams
1	28.35
2	56.70